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APPENDIX

Map of Great Britain showing the quarterly spread of the disease during 1954
(*in pocket at back of Report*)

13 FE
1955

MEMBERSHIP OF THE COMMITTEE

*The Earl St. Aldwyn, T.D. (*Chairman*) *The Lord Carrington, M.C.	Joint Parliamentary Secretary to the Ministry of Agriculture and Fisheries.
†The Earl of Dundee	Landowner and Farmer; former Parliamentary Under Secretary of State for Scotland.
The Lord Merthyr	Chairman, Royal Society for the Prevention of Cruelty to Animals.
C. H. Andrewes, Esq., M.D., F.R.C.P., F.R.S.	Deputy Director of the National Institute for Medical Research.
H. Collison, Esq.	General Secretary, National Union of Agricultural Workers.
‡J. W. Evans, Esq., M.A., Sc.D., D.Sc.	Deputy Chief Scientific Officer, Ministry of Agriculture and Fisheries.
H. Gardner, Esq., C.B.E.	Under Secretary, Ministry of Agriculture and Fisheries.
Professor R. E. Glover, M.A., B.Sc., F.R.C.V.S.	University of Liverpool.
J. Scott Henderson, Esq., Q.C.	Recorder of Portsmouth; Chairman of the Committee on Cruelty to Wild Animals.
The Hon. Mrs. George Lane	An eminent parasitologist.
C. T. Plumb, Esq.	Assistant Secretary, Board of Trade.
J. N. Ritchie, Esq., B.Sc., M.R.C.V.S., D.V.S.M.	Chief Veterinary Officer, Ministry of Agriculture and Fisheries.
J. C. Sandford, Esq., M.A.	Secretary, The British Rabbit Council.
§W. H. Senior, Esq., F.R.S.E.	Assistant Secretary, Department of Agriculture for Scotland.
‡I. Thomas, Esq., M.Sc., Ph.D.	Deputy Chief Scientific Officer, Ministry of Agriculture and Fisheries.
Major R. B. Verney	A Landowner in Buckinghamshire.
†H. Woolley, Esq.	A leading Cheshire farmer.

SECRETARY

L. R. Sankey, Esq.,

Ministry of Agriculture and Fisheries

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* Earl St. Aldwyn was appointed as Chairman to the Committee on 7th December, 1954. Lord Carrington was Chairman until his appointment as Parliamentary Secretary to the Ministry of Defence in October, 1954.

† Resigned 16th November, 1954.

‡ Dr. Evans ceased to be a member of the Committee on taking up an appointment in Australia. Dr. Thomas was appointed in his place on 7th December, 1954.

§ Mr. G. D. Sharman attended meetings in place of Mr. W. H. Senior from July, 1954 onwards.

ADVISORY COMMITTEE ON MYXOMATOSIS

To the Rt. Hon. Derick Heathcoat Amory, M.P., Minister of Agriculture and Fisheries and the Rt. Hon. James Stuart, M.P., Secretary of State for Scotland.

We submit our second report.

I. INTRODUCTION

When we submitted our first report on 16th March, 1954, there had been twelve isolated outbreaks of myxomatosis in wild rabbits in four counties in south-east England. It is now history that in spite of the determined efforts that were made to stamp out the disease when it was first confirmed in this country in 1953 it was not possible to halt its progress.

II. SPREAD OF DISEASE IN 1954

During the spring of 1954 the disease started to spread slowly at the existing centres of infection but later its momentum quickened and a number of fresh outbreaks were confirmed at more distant places. This pattern has been typical of the disease this year; a slow start with the spread of the disease gathering momentum later and isolated outbreaks occurring at a distance. In general it was not possible to establish the origin of these new isolated outbreaks but there can be no doubt that some of them were deliberately induced. By the end of June, 1954, outbreaks of the disease had been confirmed in 15 counties in England and 4 in Wales where the first outbreak was confirmed in Radnor on 8th May. The first outbreak in Scotland was confirmed in Kincardineshire on 13th July and by the end of September the disease had appeared in every county in Wales, in 47 counties in England and in 19 counties in Scotland. The spread of the disease continued during October and November but slowed down during December.

In the southern half of England and in Wales, practically the whole of some counties has been affected by the disease but in northern England and in Scotland it has been restricted to isolated outbreaks very much on the same scale as the early outbreaks in south-east England twelve months ago. The general course of the disease is shown on the map attached to this report; starting with the twelve original outbreaks, the spread of the disease is shown as at the end of June, September and December.

III. EFFECT OF THE DISEASE ON THE RABBIT

The incubation period of the disease is five to seven days and the animal is visibly affected for an average of about a week. Experience in 1954 has confirmed our view that myxomatosis is a most unpleasant disease that causes the rabbit discomfort and distress. There is ample evidence, however, that an affected rabbit continues to feed, often until its death. In view of conflicting accounts we considered whether we could usefully investigate the degree of suffering of a diseased rabbit, but came to the conclusion that it would not be possible to do so or to assess whether an affected animal suffers pain. Nevertheless, we commend the efforts of those who have been concerned to kill diseased animals.

IV. METHOD OF SPREAD

Laboratory work has confirmed that while the disease can be spread by intimate contact, it is not spread usually by droplet or other airborne infection, virus contaminated herbage, or the excretions of infected rabbits.

In Britain the principal insect vector has been the European rabbit flea (*Spilopsyllus cuniculi*) which can survive on the bodies of dead rabbits for several days and still remain infective. Besides being found at fox earths, the bodies of diseased rabbits are reported to have been attacked by carrion crows, magpies, gulls and buzzards. Predators and scavengers may thus have assisted in spreading the disease, possibly by transporting infective rabbit fleas from place to place.

Flying insect vectors appear to have played little part during 1954 in the spread of myxomatosis, despite the presence of large numbers of sylvan mosquitoes in some areas affected by the disease. There have been some cases of myxomatosis amongst domestic rabbits and, in certain coastal areas, infective mosquitoes have been found in rabbit hutches. The role of these mosquitoes in the spread of the disease is being studied.

We believe that the effect of human agency on the ultimate course of the disease has been exaggerated ; but this aspect has loomed large in the public eye. In consequence there arose a widespread demand that it should be made a penal offence knowingly to spread the disease. In our first report we recommended that no attempt should be made to assist the spread of the disease or to introduce it into unaffected areas of the country. We have reaffirmed this view on more than one occasion. At our meeting on 20th October we were asked to consider in the light of developments whether the deliberate spreading of the disease should be made a criminal offence. By then the disease was firmly established throughout the country and there was no reasonable doubt that it would survive the winter ; we were also satisfied that nothing done by man could prevent it from spreading widely next spring and summer so that deliberate spreading by individuals could have only a local affect. Furthermore we were advised that a law prohibiting deliberate spreading would be extremely difficult to enforce. For these and other reasons we came to the conclusion that no good purpose would be served by making it an offence to spread the disease. We still hold to this view ; but note that the Government felt it necessary, in response to the feeling in the House of Commons, to accept an amendment to the Pests Bill (now the Pests Act, 1954) making it an offence to use a rabbit infected with myxomatosis to spread the disease among uninfected rabbits. We regret that two of our colleagues, who had made valuable contributions to our discussions, felt it necessary to resign from the Committee on this issue.

V. MOPPING-UP OPERATIONS

In our first report we recommended that every advantage should be taken of outbreaks of myxomatosis to eliminate survivors before they build up in numbers again. We are glad to learn, therefore, that wherever myxomatosis has taken a hold, County Agricultural Executive Committees with the co-operation of farmers, landowners and agricultural workers are organising operations designed to eliminate the few rabbits that have survived the disease. These operations are being organised on a district or parish basis, usually under the control of a prominent farmer or landowner in the district. Time will show what degree of success these measures achieve.

We consider, however, that the action so far planned needs to be augmented if full advantage is to be taken of the unique opportunity we referred to in our previous report and we recommend Ministers to consider what further assistance can be given to occupiers in eliminating rabbits that survive outbreaks of myxomatosis.

The Australians with their longer experience of the disease are satisfied that it will not by itself eliminate the rabbit pest and official support is given to the policy of mopping up the survivors of the disease by the more intensive use of standard methods.

VI. IMMUNITY TO THE DISEASE

So far, in areas through which the disease has passed, very few rabbits have been found which have developed antibodies to the disease ; the proportion of survivors is probably under one per cent. Experience elsewhere, however, suggests that the number of immune survivors may increase in future years and this renders it all the more important that the present opportunity should be taken to destroy survivors. This action would not only help to rid agriculture of a pest but would also reduce the number of rabbits that would otherwise almost inevitably suffer from myxomatosis in the future. In brief, the only certain way of preventing large numbers of wild rabbits suffering from myxomatosis in the future in this country, is to destroy as many as possible now. In time it may happen that the virus will become less virulent, killing fewer rabbits but persisting in the wild rabbit population and causing much suffering ; there are good reasons for believing that, in such circumstances, it might be more humane to reintroduce in selected areas a more virulent strain of the disease to exterminate rabbits in the area and so save their offspring from suffering. At this stage in the development of the disease we prefer to reserve judgment on this suggestion. Effect could not be given to it without express statutory sanction.

VII. FUTURE OUTLOOK

With myxomatosis surviving the winter and spreading widely by natural means next spring and summer, it is possible that far greater numbers of wild rabbits will be destroyed by the disease in 1955 than in 1954. The winter of 1955-56 may well be critical for it is then likely that the number of wild rabbits in this country will be at its lowest for over a century. It will then be necessary to intensify the drive against the survivors, taking full advantage of the experience that is being gained this winter. Otherwise, the wild rabbit population might well build up progressively in numbers again year by year with all the disadvantages of an endemic disease but without any compensating economic advantage.

VIII. DOMESTIC AND LABORATORY RABBITS

In our first report we recommended that special consideration should be given to the protection of the domestic rabbit against myxomatosis. In pursuance of this advice, a leaflet was promptly issued advising owners of domestic rabbits on precautionary methods for the protection of their stock ; and arrangements were made for the production of a vaccine which became available on 10th April.

The vaccine has conferred a serviceable immunity on almost 90 per cent. of experimentally vaccinated rabbits. Of that number two-thirds showed no evidence of any reaction when the immunity was challenged with active virus and one-third showed some reaction but recovered. The immunity lasts for at least six months. There is also evidence from rabbitries where vaccine has been employed of the practical value of the vaccine in limiting the extent of an outbreak ; but there is no cure for a rabbit already infected with the disease. Up to the end of 1954 approximately 100,000 doses of vaccine had been supplied.

Research is continuing in an attempt to provide a more efficient vaccine.

IX. PROHIBITION OF IMPORT OF COTTONTAIL RABBITS

In our first report we also recommended that action should be taken to prevent the importation of such live rabbits as the cotton-tail rabbit which, while harbouring the virus, might itself become a pest. We are glad to record, therefore, the making of The Non-Indigenous Rabbits (Prohibition of Importation and Keeping) Order, 1954. This Order prohibits the importation into Great Britain and the keeping within Great Britain of all species of non-indigenous rabbits.

X. MYXOMATOSIS AND OTHER ANIMALS

The public generally has been not unnaturally worried that myxomatosis might affect man and other animals. Research on this problem has been going on ever since the disease was first reported in 1898 but the evidence of many tests and experiments during the intervening years is that it has never produced the disease in other animals. During the year a number of other animals have been reported to have symptoms suggestive of myxomatosis, e.g. sheep, cats, dogs, hedgehogs, etc. but in none of the cases investigated has there been the slightest evidence to justify the suspicions.

XI. EFFECT ON TRAPPING AND SALE OF RABBITS

The sale of wild rabbit meat for human consumption has been drastically reduced following the outbreaks of myxomatosis in this country. Consequently, trappers have no market to supply and very few of them are now engaged in catching rabbits. This is bound to have a serious effect on the rabbit meat, fur, fur felt, and fur felt hat trades. Although there is no obligation upon officers of Local Authorities to inspect all rabbit carcases intended for sale as food, a general duty is imposed on Local Authorities to execute and enforce the Food and Drugs Act, 1938, under which it is an offence for any person to sell food intended, but unfit, for human consumption. That being so, it is unlikely that butchers would buy rabbits at the present time if there is a risk of their having been affected by the disease and there can, therefore, be little danger in buying such rabbit meat as is offered for sale in the shops.

XII. PREDATORS

Information on rabbit predators is inadequate but it is well known that foxes and stoats, and to a lesser extent weasels, badgers, buzzards and some hawks feed on rabbits. Where rabbits have been greatly reduced in numbers by myxomatosis their predators would be compelled partly to change their feeding habits. There have been reports, for example, that foxes have been turning their attention to rats as well as to fowls and lambs in some parts of the country. It is too early to assess the extent of this trend but the position should be closely watched.

XIII. INOCULATION OF WILD RABBITS

We have heard of a few cases where individuals for one reason or another have inoculated wild rabbits with the view to protecting them from myxomatosis. The vaccine used provides immunity for a limited period only and this immunity is not passed on to the offspring. This practice is unlikely to be effective, and, whatever the motive, we deprecate any attempt to preserve the wild rabbit population of this country.

XIV. EFFECT ON VEGETATION

Where rabbits have been largely eliminated by myxomatosis there has been a marked improvement in the vegetation, especially grass ; there has also been some indication of a natural regeneration of forest trees.

The other side of the picture will be seen on steep chalk downland pastures where cultivation is difficult or inappropriate and which owe their existence to continuous grazing ; for some years the only grazing animal on many of these downlands has been the rabbit. When the rabbits are eliminated and grazing ceases, these areas will become dominated either by unpalatable coarse grasses or scrub. Therefore, wherever rabbits on these downlands are being killed by myxomatosis, immediate attention must be given to stocking them with sheep or cattle, otherwise the land will become agriculturally valueless. In some cases it may be necessary to allow the turf to recover from severe rabbit grazing or to seed bare patches with appropriate species of grasses and legumes.

XV. DEVELOPMENTS IN AUSTRALIA AND EUROPE

In Australia mosquitoes have again been the principal vectors of myxomatosis during the past season, aided by artificial inoculation of large numbers of rabbits in some States. There is reliable evidence that field strains of the virus in Australia have become slightly attenuated and are now killing 90 per cent. or less of affected rabbits, instead of the 99 per cent. destroyed formerly.

In France, rabbits have virtually disappeared over wide areas and the only department that remains unaffected by the disease is Finistere, Brittany. Public interest in myxomatosis has died down, although fresh cases of infection in wild and domestic rabbits still occur. The disease has appeared in Ireland and has continued to affect rabbits in Belgium, Germany, Luxembourg, the Netherlands and Spain and there have been some outbreaks among domestic rabbits in Switzerland.

XVI. SUMMARY

(i) During 1954 myxomatosis in wild rabbits spread to every county in Great Britain except Selkirk. Its spread was most intensive in Wales and in the southern half of England. (Paragraph 2.)

(ii) The principal insect vector of the disease during 1954 has been the European rabbit flea; except in some coastal areas the mosquito appears to have played little or no part. (Paragraph 4.)

(iii) Although County Agricultural Executive Committees are organising co-operative action by farmers, landowners and agricultural workers to eliminate rabbits that survive the disease, we do not believe that this action by itself will be sufficient to take full advantage of the unique opportunity we referred to in our previous report and we recommend Ministers to consider what further assistance could be given to occupiers in eliminating rabbits that survive outbreaks of myxomatosis. (Paragraph 5.)

(iv) During the year a number of other animals have been reported to have symptoms suggestive of myxomatosis but in none of the cases investigated has there been the slightest evidence to justify the suspicion. (Paragraph 10.)

(v) Where rabbits have been largely eliminated by myxomatosis, there has been a marked improvement in the vegetation ; but on steep chalk downland where the rabbit has been the only grazing animal in recent times, immediate attention must be given to re-stocking with sheep or cattle, or else the land will revert to coarse grass or scrub and become agriculturally valueless. (Paragraph 14.)

ST. ALDWYN,
Chairman.

6th January, 1955.

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MYXOMATOSIS

QUARTERLY SPREAD DURING 1954

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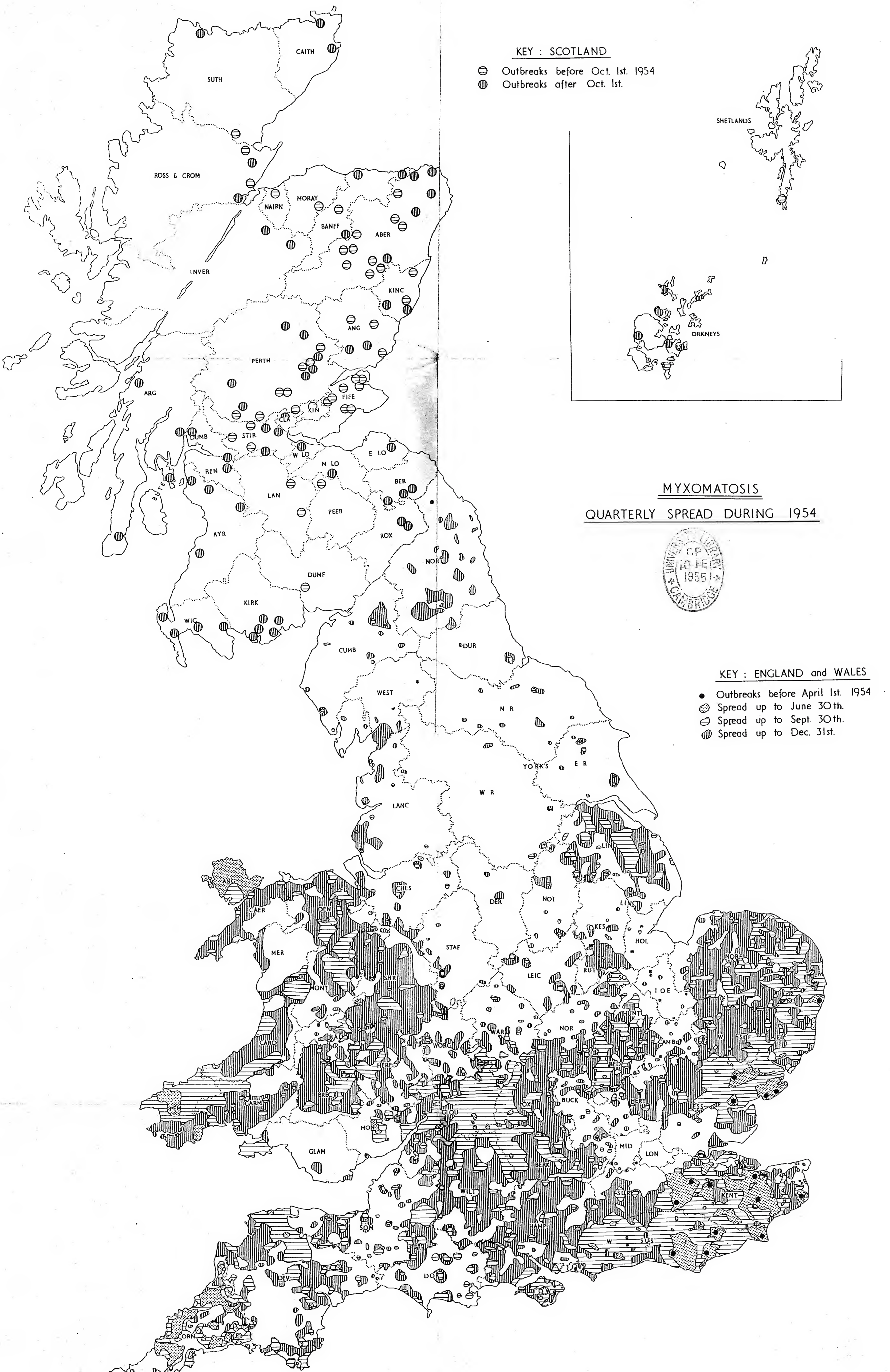

KEY : SCOTLAND

- ⊖ Outbreaks before Oct. 1st. 1954
- ◍ Outbreaks after Oct. 1st.

KEY : ENGLAND and WALES

- ● Outbreaks before April 1st. 1954
- ▩ Spread up to June 30th.
- ⊖ Spread up to Sept. 30th.
- ◍ Spread up to Dec. 31st.

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